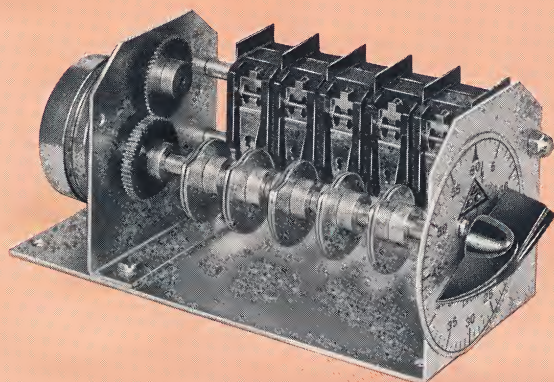


ZENITH MULTI-CIRCUIT CYCLE TIMERS

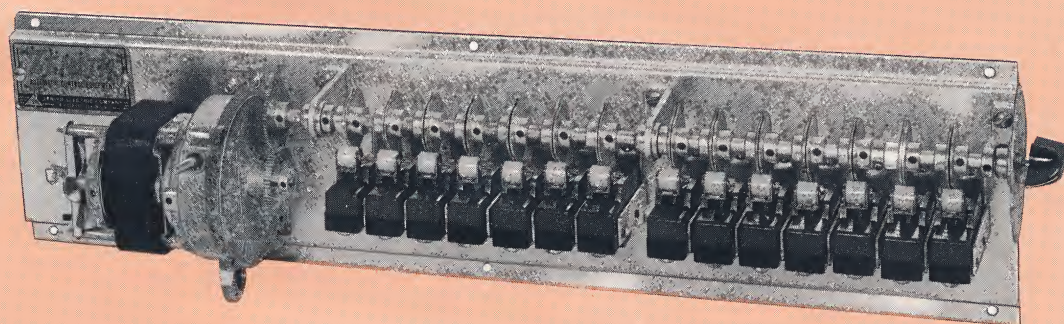
for automatic sequence control of any number of circuits



MODEL WM-5 WITH TYPE A MOTOR

These timers are precision motor-driven controls designed to repeat a definite electrical ON-OFF schedule of a number of circuits over a set time cycle. Highest quality construction assures long, dependable service required of sequencing controls. All parts are easily accessible for inspection or adjustment. Each contact is a single pole, double-throw snap-action switch. A pair of separate adjustable cams are used to control each switch. Each cam of the pair is half cut to allow full cycle adjustment of each contact. The timer motor drives a shaft through a gear train for the exact cycle speed specified and each contact switch is tripped ON and OFF according to the preset schedule. A cycle position knob and dial are supplied as standard equipment.

APPLICATIONS: Ideal for such control applications as laundry and dry cleaning equipment, vending machines, lighting control, mixing machinery and test equipment.



MODEL WB-14 WITH TYPE B MOTOR

The **WM Series** Cycle Timers are available for control of 2 to 9 circuits with a cycle speed in accordance with the chart on page E-10. The WM series is driven by the type A standard synchronous motor and all contact switches are stacked on common mounting rods making the WM series extremely compact.

The **WB Series** Cycle Timers are available for control of 2 to 100 or more circuits. Depending on the cycle

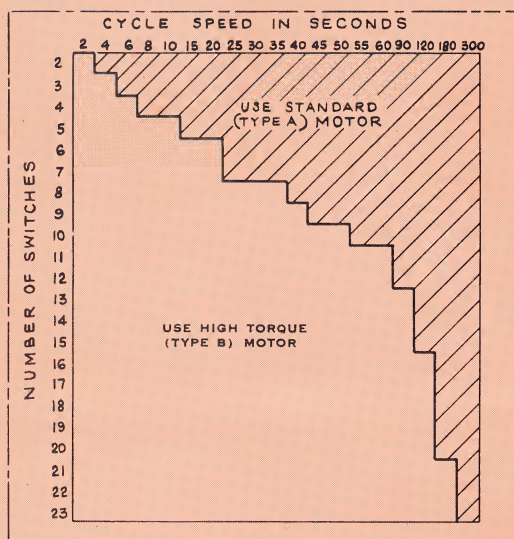
speed (per the chart on page E-10), the WB series timer is supplied with either the type A synchronous motor or the type B high-torque motor. All contact switches are individually mounted on the base plate to facilitate the servicing of one switch without disturbing any other. The base plate on the WB series is slotted to allow movement of the drive motor to easily change gears for altering the cycle speed.

Features WM•WB

Number of Circuits	WM: 2 to 9—WB: 2 to 100 or more.
Setting Tolerance	1/2% of time cycle.
Minimum Contact Setting	1% of total time cycle.
Voltages	120 or 240 volt, 50 or 60 cycle.
Electrical Rating	15 amps, 250 volt non-inductive; 350 watts tungsten lamp load. (1000 watt contact switch available on special order).
Construction	Open type for panel mounting or enclosed in NEMA-1 wrap-around cabinet.
Approvals	Underwriters' Laboratories.



ZENITH MULTI-CIRCUIT CYCLE TIMERS



Series WB Multi-circuit cycle timers can be supplied with either the standard type A motor or the high torque type B depending upon the number of circuits and cycle speed. The above chart shows the applications which require the use of the type A or type B motor. Note that the type A motor can generally be supplied for all cycle speeds slower than 4 minutes. For borderline application, write Zenith for information.

Special Variations

MULTI-CIRCUIT RESET TIMERS—to control two or more circuits on a preset schedule and to automatically reset to zero on interruption of voltage or at end of cycle.

SERIES WAZ to control 2, 3 or 4 external load circuits. This series is supplied with the internal clutch type motor as used on our Automatic Reset Timers.

Option P (Model WAZ-P). Available in speeds up to 2 minutes. To start from a maintained voltage source and hold at the end of the time cycle. Unit shuts off and automatically resets to zero when voltage is removed. (Operations similar to Series FR and AZC.)

Option C (Model WAZ-C). Available in speeds up to 10 minutes. To start from a momentary contact and reset to zero automatically at the end of the time cycle. (Operation similar to model MZC.)

SERIES WBZ to control 2 to 10 external load circuits. Available in speeds from 1 second to 2 hours. This series is supplied with the external clutch type motor and is available in either Option P (Model WBZ-P) or Option C (Model WBZ-C).

The complete model number will be determined by the number of external load circuits required. For example, if 3 external load circuits are required in the WAZ series, with option P operation, specify model WAZ-3P.

Ordering Information

Suffix	Description
1	Non-synchronous DC drive motor.
2	Chronometric DC drive motor.
R	Relay for single cycle control.
C	Special coded cams or custom variation.
V	Variable speed drive motor complete with adjusting rheostat to give cycle speed variation on a 2 to 1 ratio.

Single Cycle Control—For single cycle operation, an additional circuit must be used to control the timer motor. Thus, if a three circuit unit is desired for single cycle operation, the WM-4 or WB-4 must be ordered. For units with a cycle speed longer than 60 seconds and a momentary start is used, accessory R, relay for single cycle, must also be ordered.

Dimensions

SERIES WM

Number of Circuits	Length	Height	Width
2, 3	5½	3⅛	2⅞
4	6	3⅛	2⅞
5, 6, 7	7⅞	3⅛	2⅞
8, 9	9½	3⅛	2⅞

SERIES WB

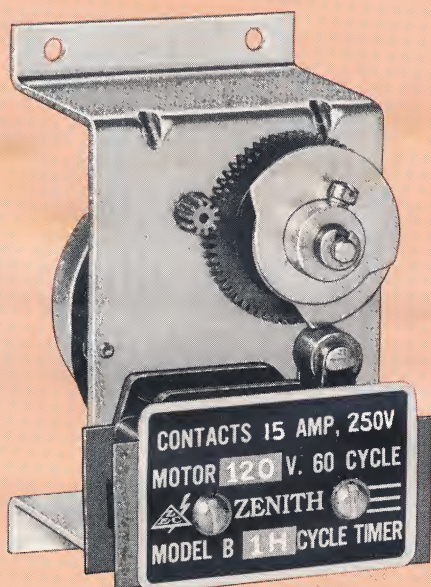
Number of Circuits	Length	Height	Width
2, 3	10½	4	4⅞
4, 5, 6,	13	4	4⅞
7, 8	14½	4	4⅞
9-12	18⅜	4	4⅞
13, 14	20	4	4⅞
15-18	23¾	4	4⅞
19-24	26⅜	4	4⅞

When Ordering, Specify model WM or WB, number of circuits required, voltage and frequency, accessories required and whether open or enclosed type.

ZENITH CYCLE TIMERS

SERIES

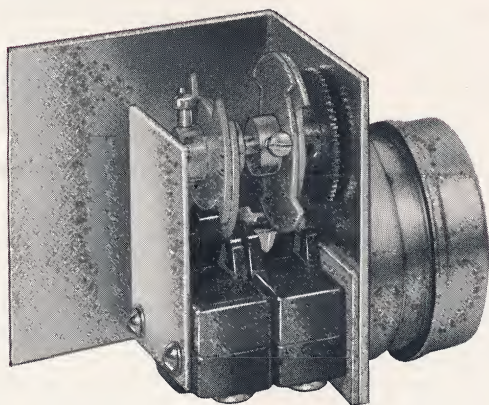
B-1 • MW-2

series B-1 for single circuit repeat cycling control

Series B-1 bracket-mounted timer is designed to control circuits requiring single cycle set timing or repeating cycles with ON and OFF setting. Mounted on a sturdy steel bracket, this compact unit is furnished in single switch design only. Available with a 10 RPM maximum cam shaft speed. By means of multiple cuts, up to 120 impulses per minute can be achieved. Minimum contact setting is 1% of total cycle. Offers an unlimited number of uses in applications of circuit interruption service. Used for flashing lights, coding signals, ON-OFF testing and for many industrial applications. Adjustable cams permit setting from zero to 100% of the total time cycle. Coded cams can be supplied to meet specifications.

Contacts	S.P.D.T. rated 15 amps, 250 volts non-inductive; 350 watts tungsten lamp load.
Dimensions	Open type: $3\frac{3}{4}$ " H x $2\frac{1}{8}$ " W x $2\frac{3}{4}$ " D — 1-lb. Enclosed type: 5" H x 5" W x 3" D — 3-lbs.
Approval	Underwriters' Laboratories—for industrial control applications.

When Ordering, Specify model B-1, timing cycle, voltage and frequency and whether open or enclosed type.

series MW-2 for dual circuit repeat cycling control*Ordering Information*

Model	Cycle Speed	Model	Cycle Speed
MW-2A	81 seconds	MW-2F	27 minutes
MW-2B	162 seconds	MW-2G	54 minutes
MW-2C	5.4 minutes	MW-2H	108 minutes
MW-2E	10.8 minutes		

Series MW-2 is ideal for two circuit cycling control of motors and other equipment. Used as a standard component for laundry reversing controls and for timing of reversing operations in motor control applications. Adjustable cams allow setting of pause and running time of reversing machinery. Cams can also be provided to fulfill many other requirements.

The standard unit is supplied with two-cut cams for two operations per cycle.

These units are built only for cycle speeds listed. Supplied only at the listed cycle speeds, and only at 60 cycles.

Contacts	S.P.D.T. rated 15 amps, 250 volts non-inductive; 350 watts tungsten lamp load.
Dimensions	Open type: $3\frac{3}{4}$ " H x $2\frac{3}{4}$ " W x $2\frac{1}{2}$ " D— $1\frac{1}{4}$ -lbs. Enclosed type: 5" H x 5" W x 3" D—3-lbs.
Approval	Underwriters' Laboratories—for industrial control applications.

When Ordering, Specify model number, cycle speed, voltage and frequency and whether open or enclosed type.



ZENITH ELECTRIC COMPANY 152 W. WALTON ST., CHICAGO, ILL. 60610

E-13

SERIES
ETC • SA
RT • IR5

ZENITH SPECIAL TIMING CONTROLS

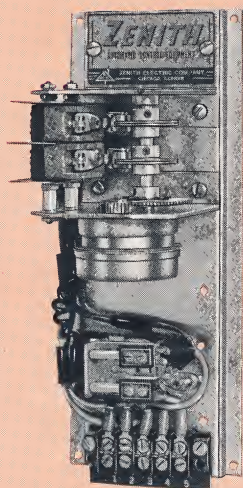
Model ETC Running Time Meter



Records the operating time of any machine or equipment powered by alternating current. The meter itself is engineered to withstand hard usage, normal vibration and shock, and is ruggedly built of the best materials and assembled by skilled precision instrument makers. The motor is specially designed for this particular instrument and all pivots in the mechanism are designed to prevent breakage and to assure long life. To eliminate dust and moisture, the mechanism is totally enclosed and sealed.

The unit is not resettable. Records up to 99999.9 hours with minimum reading of 1/10 hour. Dimensions: Bezel diameter, 2.69"; case diameter, 2.10"; overall depth, 2.94".

Model SA Sequence Alternator



Ideal for obtaining alternate circuit selection. Primary application is for dependable control on booster pumps for water supplies. Can be adapted to any requirement for alternate switching between two circuits. Designed primarily so that when two pumps or compressors are used, each unit operates alternately. This will keep each unit in working order, and will prevent the standby unit from deteriorating due to lack of use. Each time the control circuit is energized, the unit alternates equipment. Control circuit is energized from such pilot controls as float or pressure switches.

This is a motor driven stepping device with an inherent time delay. Designed to assure that momentary fluctuations of the control circuit limit switch will not alternate pumps.

Model RT Impulse Timer

Designed to repeat a continuous electrical ON-OFF cycle wherein the ON time is always equal to the OFF time. Also repeats pulses at equal time intervals set on the dial.

The dial rotates back and forth between adjustable trippers. Rotation time in one direction is ON time, and is always equal to rotation time in the reverse direction or OFF time. As the dial reaches either limit of rotation, it produces an impulse. Thus, the ON time, which is equal to the OFF time, is also the time interval between pulses. Pulse duration is 3% of total time cycle.

Model	Minimum Setting	Maximum Setting
RT1M	2 seconds	60 seconds
RT2M	4 seconds	120 seconds
RT5M	10 seconds	300 seconds
RT10M	20 seconds	600 seconds

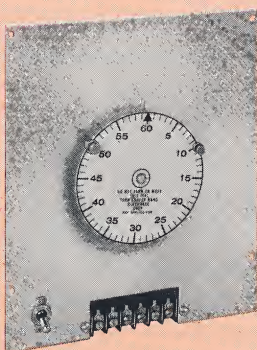
Additional ranges available on request.

Model IR5-12 Lawn Sprinkling Control

The ideal control for lawn sprinkling of homes and institutions. The Zenith IR5-12 control provides dependable ON-OFF sequencing of 2 to 12 circuits. This is important as most lawns are too large to be sprinkled by a single valve.

The number of circuits actuated will depend on the number of clips used. The time each circuit is ON will depend on the time between its clip and the next. For example, if seven circuits are to be used, the reset clip is placed after the seventh clip so that the unit will automatically reset after the seventh section has been sprinkled.

An indicator dial is provided to indicate which circuit is ON and also used to select a circuit for manual operation. A reset button is provided to manually reset the indicator dial. A 14 point wheel provides operations according to selected days of the week or every other day. For ease of installation, a heavy-duty terminal block is provided.



When Ordering, Specify model number, voltage and frequency and whether open or enclosed type.

TIMING CONTROLS

SECTION E CATALOG 20 LIST PRICES

February, 1965

Supersedes Price Sheet

dated: June 15, 1964

INTERVAL TIMERS

SERIES	TIME RANGES	CONSTRUCTION	115 VOLT	230 VOLT
400	Minutes: 1, 6, 15, 30.	Open Type	\$ 15.00	\$ 16.00
500	Hours: 1, 2, 5, 6, 10,	Compact Enclosure	17.00	18.00
600	20, 24, 60, 72,	Explosion Proof	69.00	70.00
900	120.	Basic Enclosure	19.00	20.00
			50 cycle units add \$4.00.	
		Adders	Description	Price
		1	2 Circuit Unit	\$ 6.00
		2	3 Circuit Unit	12.00
		S	Adjustable Stop Lever	6.00
		P	Six Foot Line Cord and Plug	3.50
		R	Female Receptacle	5.00
		L	Signal Light	5.00
		T	Toggle Switch	2.50
		B	Signal Buzzer	5.00

TIME DELAY TIMERS

FR	Seconds: 15, 30, 60. Minutes: 2, 5, 10.	Open Type	15.00	16.00
		Enclosed Type	20.00	21.00
MFR		Open Type	27.00	28.00
		Enclosed Type	32.00	33.00
AZC		Open Type	19.00	20.00
		Surface Mount Bracket	21.50	22.50
		Enclosed Type	24.00	25.00

AUTOMATIC RESET TIMERS

MZ (Models MZC, MZO, MZP, MZY)	Seconds: 15, 30, 60. Minutes: 2, 5, 10.	Open Type	35.00	36.00
		Surface Mount Bracket	37.50	38.50
		Enclosed Type	40.00	41.00
M2Z (Models M2ZC, M2ZR)		Surface Mount Bracket	70.00	72.00
		Enclosed Type	75.00	77.00
PBR		Open Type	24.00	25.00
		Enclosed Type	29.00	30.00
		PBR Adders	Description	Price
		P	Six Foot Line Cord and Plug	\$ 3.50
		R	Female Receptacle	5.00
		L	Signal Light	5.00
Z (Models ZC, ZO ZM, ZP, ZR, ZJ)	Minutes: 6, 15, 30, 60. Hours: 2, 5, 10.	Open Type	43.00	44.00
		Surface Mount Bracket	46.00	47.00
		Enclosed Type	48.00	49.00
ZMC		Open Type	55.00	56.00
		Surface Mount Bracket	58.00	59.00
		Enclosed Type	60.00	61.00
Z2C		Surface Mount Bracket	115.00	117.00
		Enclosed Type	120.00	122.00

February, 1965
Supersedes Price Sheet
dated June 15, 1964

MULTICIRCUIT CYCLE TIMERS

Series	Circuits	115 Volt		230 Volt	
WM	2	\$24.00		\$25.00	
	3	31.00		32.00	
	4	38.00		39.00	
	5	45.00		46.00	
	6	52.00		53.00	
	7	59.00		60.00	
	8	66.00		67.00	
	9	73.00		74.00	
WB	2 3 4 5 6 7 8 9 10 11 12 13 14 15	Type A Motor		Type B Motor	
		115 Volt	230 Volt	115 Volt	230 Volt
		Use WM Models		\$ 49.00	\$ 50.00
				56.00	57.00
				63.00	64.00
				70.00	71.00
				77.00	78.00
				84.00	85.00
				91.00	92.00
				98.00	99.00
		\$ 80.00	\$ 81.00	105.00	106.00
		87.00	88.00	112.00	113.00
		94.00	95.00	119.00	120.00
		101.00	102.00	126.00	127.00
		108.00	109.00	133.00	134.00
		115.00	116.00	140.00	141.00

Adders	Description	Price
1	Non-synchronous DC Drive	\$ 35.00
2	Chronometric DC Drive	175.00
R	Relay for Single Cycle Control	12.00
C	Special Coded Cams or Custom Variation	On Application
V	Variable Speed Drive (WB Series With Type B Motor)	35.00

Additional Circuits: Add \$7.00 to list price of WB-15 for each additional circuit required.

50 Cycle Operation: Add \$4.00 to list price.

Enclosures: Add 20% to list price of WM, WB, WAZ or WBZ units.

WAZ/WBZ Series: Automatic reset feature.

Model WAZ-P: Add \$5.00 to list price of WM series.

Model WAZ-C: Add \$24.00 to list price of WM series.

Model WBZ-P: Add \$12.00 to list price of WB series (with type B motor).

Model WBZ-C: Add \$24.00 to list price of WB series (with type B motor).



ZENITH ELECTRIC COMPANY

152 W. Walton St., Chicago, Illinois 60610

Phone: (312) 642-3322

TIMING CONTROLS

SECTION E CATALOG 20
LIST PRICES

June 15, 1964

PERCENTAGE TIMERS

SERIES	TIME RANGES	CONSTRUCTION	115 VOLT	230 VOLT
CP	Seconds: 4, 15, 30, 60. Minutes: 5, 15, 30, 60. Hours: 2, 6, 12, 24.	Open type with terminal block and dust cover	\$28.00	\$29.00
	Adders	Description	Price	
	S	Motor Cutout Switch	\$6.00	
	N	NEMA 1 Enclosure	7.00	
	X	Less Terminal Block and Dust Cover (Deduct)	5.00	
	L	Indicating Light	5.00	

CYCLE TIMERS

SERIES	CIRCUITS	TIME RANGES	CONSTRUCTION	115 VOLT	230 VOLT
B-1	1	As Required	Open Type Enclosed Type	\$14.00 19.00	\$15.00 20.00
MW-2	2	Seconds: 81, 162. Minutes: 5.4, 10.8, 27, 54, 108.	Open Type Enclosed Type	17.00 22.00	18.00 23.00

SPECIAL TIMING CONTROLS

SERIES	DESCRIPTION	CONSTRUCTION	115 VOLT	230 VOLT
ETC SA	Running Time Meter Sequence Alternator	Panel Mount Open Type Enclosed Type	\$ 22.00 40.00 45.00	\$ 23.00 41.00 46.00
RT	Impulse Timer	Open Type Enclosed Type	105.00 110.00	106.00 111.00
IR5-12	Lawn Sprinkling Control	Open Type Enclosed Type	195.00 200.00	196.00 201.00
Transformer for 24 volt water valves — add \$12.00 to list price.				



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